Inequality Word Problems Worksheet Answer Key PDF

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Part 1: Building a Foundation

Which symbol represents "greater than or equal to"?

undefined. <

undefined. >

undefined. ≤

undefined. ≥ ✓

The correct symbol for 'greater than or equal to' is '≥'.

Which of the following are true about inequalities? (Select all that apply)

undefined. They can be represented on a number line. ✓

undefined. They always have a single solution.

undefined. They use symbols like < and >. ✓

undefined. They represent relationships where two expressions are equal.

Inequalities can be represented on a number line and use symbols like < and >.

Define what an inequality is and provide an example using the symbol "<".

An inequality is a mathematical statement that shows the relationship between two expressions that are not necessarily equal. For example, x < 5 means x is less than 5.

List the four inequality symbols and describe what each one means.

1. What does < mean?

Less than

2. What does > mean?

Greater than

3. What does ≤ mean?

Less than or equal to

4. What does ≥ mean?

Greater than or equal to

The four inequality symbols are: 1) < (less than), 2) > (greater than), 3) ≤ (less than or equal to), 4) ≥ (greater than or equal to).

Part 2: Understanding and Interpretation

If a problem states "at least 10," which inequality symbol should be used?

undefined. <

undefined. >

undefined. ≤

undefined. ≥ ✓

The correct symbol to use is '≥', indicating at least 10 or more.

Which of the following statements can be represented by the inequality x > 5? (Select all that apply)

undefined. x is more than 5. ✓

undefined. x is at least 5.

undefined. x is greater than 5. ✓

undefined. x is fewer than 5.

The statements that can be represented are: x is more than 5 and x is greater than 5.

Explain how you would graph the inequality x ≤ 3 on a number line.

To graph x ≤ 3, you would draw a closed circle on 3 and shade to the left to indicate all values less than or equal to 3.

Part 3: Application and Analysis

A store sells apples for $2 each. If you have $20, what is the maximum number of apples you can buy? Formulate the inequality.

undefined. $2x < 20$

undefined. $2x \leq 20$ ✓

undefined. $2x > 20$

undefined. $2x \geq 20$

The correct inequality is $2x \leq 20$, where x is the number of apples.

Which of the following inequalities correctly represents the statement: "The sum of a number and 7 is less than 15"? (Select all that apply)

undefined. $x + 7 < 15$ ✓

undefined. $x + 7 \leq 15$

undefined. $x + 7 > 15$

undefined. $x + 7 \geq 15$

The correct inequality is $x + 7 < 15$.

Create an inequality to represent the scenario: "A car rental company charges $50 per day. You have a budget of $300. How many days can you rent the car?"

The inequality would be $50x \leq 300$, where x is the number of days.

Which of the following best describes the solution set for the inequality $3x - 4 > 5$?

undefined. $x > 3$ ✓

undefined. $x < 3$

undefined. $x > 9/3$

undefined. $x < 9/3$

The correct description is $x > 3$.

Part 4: Evaluation and Creation

Which inequality best represents the scenario: "A basketball team needs to score more than 100 points to win the game"?

undefined. $x \geq 100$

undefined. $x > 100$ ✓

undefined. $x \leq 100$

undefined. $x < 100$

The correct inequality is $x > 100$.

Evaluate the following inequalities and determine which have the same solution set as $x > 2$. (Select all that apply)

undefined. $x \geq 3$

undefined. $x > 1$ ✓

undefined. $x \geq 2$ ✓

undefined. $x > 2$ ✓

The inequalities that have the same solution set are $x > 1$ and $x \geq 2$.

Create a real-world problem that can be solved using the inequality $x + 5 \leq 20$. Explain the steps to solve it and interpret the solution.

An example problem could be: 'You have a maximum of $20 to spend on snacks, and each snack costs $5. How many snacks can you buy?' The steps involve isolating x and interpreting the result.